

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on December 18, 2002, and the references cited therewith.

Claims 36, 43, 47, 51, 52, 53, and 57 are amended, no claims are canceled, and no claims are added; as a result, claims 36-60 are now pending in this application.

§112 Rejection of the Claims

Claims 47-60 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

The rejection states:

In each of the independent claims 47, 51 , 53 , and 57, applicant claims a row of cathode lines on a substrate, then claims "a gate line to cathode distance between a portion of the gate line and the cathode is substantially thinner than the gate line thickness." Gate line thickness is the thickness of the gate insulator on which gate line is formed. In this case, gate line to cathode distance is same as gate line region thickness at any region of the display, since there is no emitter cone having tip is claimed. Thus it is unclear what is meant by gate line to cathode distance between a portion of the gate line to cathode (is it emitter tip of the emitter cone, which is not claimed here?) is substantially thinner than gate line region thickness.

Applicant respectfully maintains that the term "cathode" as used in the claims is sufficient under 35 USC § 112, second paragraph. However, in the interest of moving the application forward towards allowance, Applicant has amended the claims to include the term "cathode emitter tip." Reconsideration and withdrawal of the 35 USC § 112, second paragraph rejection is respectfully requested.

§102 Rejection of the Claims

Claims 36-38, 40-41, 43-44, 46-49, 52-54, 56-58, and 60 were rejected under 35 USC § 102(b) as being anticipated by Greschner (U.S. Pat. No. 5,817,201).

The rejection states:

Greschner et al. disclose a field emission device (Fig 2 & Fig 3A) comprising a number of cathodes 3, a number of cathode emitter tip (9, see Fig 2

and also see Fig 3A) formed in rows along a substrate (4), a gate insulator (6) formed along the substrate and surrounding the cathodes (see Fig 2), a number of gate lines (5 or 18) formed on the gate insulator (6), an anode (11) being formed orthogonal and opposing the cathodes (lines 66 of column 5- lines 54 of column 6).

Greschner appears to show devices and methods of forming field emission cathodes using conformal layer deposition on a sacrificial layer (col. 2, lines 59-61). The process of Greschner appears to require at least two dielectric layers (33 and 38 of Figure 4E). Greschner further appears to show forming polysilicon cones 42 using a “mold” process that requires a dielectric layer thickness that is thicker than a height of the cones 42.

In contrast, claims 36, 47, 51, 53, and 57, as amended, include a gate insulator having a thickness that is **thinner than a height of the number of cathode emitter tips**. Further in contrast, claims 43 and 52, as amended, include a **single** gate insulator located along the substrate and surrounding the cathode emitter tips, the single gate insulator having a gate line region thickness.

Because the Greschner reference does not show every element of Applicant's independent claims, a 35 USC § 102(b) rejection is not supported. Reconsideration and withdrawal of the rejection is respectfully requested with respect to Applicant's independent claims 36, 43, 47, 51, 52, 53, and 57. Additionally, reconsideration and withdrawal of the rejection is respectfully requested with respect to the remaining claims that depend therefrom as depending on allowable base claims.

§103 Rejection of the Claims

Claims 39, 42, 45, 50-51, 55, and 59 were rejected under 35 USC § 103(a) as being unpatentable over Greschner (U.S. Pat. No. 5,817,201) as applied to claim 36.

Applicant respectfully submits pursuant to amendments and arguments presented above under 35 USC § 102(b) that independent claims 36, 43, 47, 51, 52, 53, and 57 are in condition for allowance. Reconsideration and withdrawal of the 35 USC § 103(a) rejection with respect to claims 39, 42, 45, 50-51, 55, and 59 is respectfully requested as these claims depend from allowable base claims.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

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CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6944 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, Washington, D.C. 20231, on this 16 day of March 2003.

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